

REMARKS

This application has been carefully reviewed in light of the Office Action dated August 13, 2002. Claims 27, 28 and 30 to 35 remain in this application. Claim 28 has been amended and new claims 30 to 35 have been added. Support for the new claims is found, *inter alia*, in claims 27 and 28 and in the specification at page 36, lines 21 to 25; page 37, lines 3 to 9; and page 40, lines 5 to 10. Claims 28 and 32 are the independent Claims. Reconsideration and further examination are respectfully requested.

Claims 27 and 28 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,024,960 (Haken) in view of U.S. Patent No. 5,777,363 (Malhi). Applicant has carefully considered the foregoing rejection and the cited references and respectfully submits that the claims herein are patentably distinguishable over the applied references for at least the following reasons:

The applied art fails to teach or suggest the invention as defined by amended independent Claim 28. In particular the applied art is not seen to disclose or suggest the feature of “a field insulating film” that is “located directly above the low-concentration drain region.”

Harken is seen to disclose a low concentration drain region (15) that is located below a gate oxide film (7) (see, e.g., Harken Figure 1). As is clear from Figure 1, the field insulating film disclosed in Harken is not located directly above the low concentration drain region. In contrast, the claimed invention, as defined by amended independent Claim 28, recites a field insulating film (7) that is located

directly above the low-concentration drain region (5A) (see, e.g., specification, page 36, line 10; and figure 14). Harken is therefore not seen to disclose or suggest the feature of a field insulating film that is located directly above the low-concentration drain region. Accordingly, Harken is not seen to disclose or suggest the features of amended independent Claim 28 and is allowable for at least that reason.

Malhi, cited by the Examiner, is not seen to remedy the above deficiencies of Harken. In particular, Malhi is not seen to disclose or suggest the feature of “a field insulating film” that is “located directly above the low-concentration drain” (see, e.g., Malhi col. 2, lines 35 to 42; and figure 1a, 2.) For example, as clearly shown in Figure 2, the low concentration drain region (12) disclosed in Malhi is located partly under the gate oxide layer (18) and the drain region (14). Therefore Malhi is not seen to disclose or suggest the feature of a field insulating film that is located directly above the low-concentration drain region

Moreover, regarding the Examiner’s statement on page 3 of the Office Action that “it would have been obvious for one skilled in the art at the time of the invention to construct the thickness of the field oxide region of Harken of that provided by Malhi, for the purpose, for example of [sic] providing better device isolation and also such thicknesses are well-known in the art and do not provide any unexpected results,” Applicant respectfully traverses this rejection, and in the event the Examiner seeks to maintain this ground of rejection, requests that the Examiner provide documentary evidence that these features would indeed be well-known. See MPEP 2144.03.

Accordingly, neither Harken nor Mahli, alone or in combination are seen to disclose or suggest the features of amended independent Claim 28. Reconsideration and withdrawal of the §103(a) rejection of amended independent Claim 28 are respectfully requested.

The remaining claims depend directly from amended independent Claim 28, and recite additional features of the invention which, when taken as a whole, are neither disclosed nor fairly suggested by the applied art and are therefore also believed to be in condition for allowance. Accordingly, independent consideration of each of these claims on their respective merits is respectfully requested.

In particular, Applicant respectfully directs the Examiner's attention to new dependent Claim 31, which recites the feature of "the thickness of the gate insulating film is in the range of 100 to less than 200 Å," that was previously included in Claim 28. On page 2 of the Office Action, the Examiner states that this feature is disclosed by Harken. Applicant respectfully traverses this assertion. Harken discloses a gate oxide whose thickness is at least 200 Å (Harken, col. 2, lines 35 to 36), and preferably in the 200 to 350 angstrom range (Harken, col. 2, lines 59 to 60; and col. 3 lines 7 to 8.) According to Harken "strength of a 200 angstrom gate oxide" is required to "adequate[ly] to support constant 10 to 12 volt operation.") Harken fails to disclose or suggest the feature of a gate insulating film with a thickness is in the range of 100 to less than 200 Å, as recited in amended dependent Claim 31.

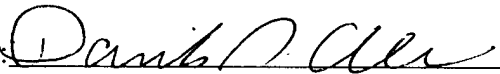
In view of the foregoing, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6700 to discuss the steps necessary for placing the application in condition for allowance.

Any charges incurred or credits due in connection with the filing of this response should be charged or credited to our Deposit Account No. 50-1314.

Respectfully submitted,
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Date: February 11, 2003

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Version With Markings To Show Changes Made To The Claims

Please amend Claim 28 as follows:

28. (Twice Amended) A semiconductor integrated circuit comprising:
an HVMISFET (high withstand voltage MOSFET) having:

a source region and a drain region of a second conductivity type formed
apart from each other on a surface of a semiconductor region of a first conductivity
type,

a channel-forming region which is the surface of the semiconductor
region between the source region and the drain region,

a gate formed on the channel-forming region via a gate insulating film
[of a thickness in the range of 100 – 200 Å],

the drain region being constituted of a low concentration drain region
and a high-concentration drain region in contact with each other,

the low-concentration drain region being disposed between the
channel-forming region and the high concentration drain region, [and]

a field insulating film with a thickness at least one order of ten greater
than that of the gate insulating film formed by self-alignment located directly above
the low-concentration drain region; and

an LVMISFET (low withstand voltage MOSFET) of the same
conductivity type formed on the same semiconductor region and having the same
threshold voltage and gate insulating film as the HVMISFET,

a surface concentration of the semiconductor region directly under the
gate insulating film being partially increased to make the threshold voltage not less
than 0.7 V_t and

drain regions and source regions of the HVMISFET and the
LVMISFET being constituted as phosphorus impurity regions.